Manitoba

Annual Report 1987 - 88

The Clean Environment Commission

90-03287/

Manitoba

Clean Environment Commission

Office of the Chairperson

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The Honourable J. Glen Cummings,
Minister of Environment,
Room 344 Legislative Building,
Winnipeg, Manitoba.
R3C 0V8

Dear Mr. Cummings:

Pursuant to the provisions of section 11 of The Clean Environment Act, The Clean Environment Commission herewith transmits to you, as Minister responsible, its Annual Report.

Section 11(1) of The Clean Environment Act provides that the annual report of the Commission shall include:

(a) the investigations and hearings conducted by the Commission;

(b) the orders made;

(c) regulations made under this Act;

(d) a review of the state of the environment;

(e) such other matters as the minister may require.

In the discharge of its responsibilities under that subsection of the Act, The Clean Environment Commission is pleased to submit the particulars set forth in the following pages of its Annual Report for the fiscal year ending March 31st, 1988.

Submitted on behalf of the Commission.

O. Stanley Eagleton,
Chairperson.

Minister of
Environment

Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

His Honour,
The Honourable George Johnson,
Lieutenant-Governor of Manitoba,
Room 235 Legislative Building,
Winnipeg, Manitoba
R3C 0V8

Your Honour:

The undersigned has the honour to present the Annual Report of The Clean Environment Commission detailing its activities for the fiscal year ending March 31st, 1988.

Yours sincerely,

J. Glen Cummings,
Minister of Environment

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Preface

The Clean Environment Commission is a quasi-judicial regulatory body which, for the reporting period, issued orders defining limits, terms and conditions for operations that had the potential for the discharge of contaminants into the environment. The Commission reports to the Environment Minister but it is independent of the Environment Department and the careers of lay persons who make up the Commission are not generally connected with government service. While the Commission gives due consideration to the representations of industries, utilities, municipal departments, and to the advice of environmental experts, the members are also attuned to the concerns of citizens whose lives may be affected by the limitations of emissions under consideration by the Commission. The Commission also is careful to avoid any conflict of interest on the part of its members in connection with any matter under consideration.

The Clean Environment Act which was the main Provincial environmental legislation in force during the period under review, required the Commission to advertise all operations registered under the Act. This provided advance public notice of undertakings likely to emit pollutants into the environment. The Commission was required to hold a hearing when a request was made by any member of the public likely to be affected by an order of the Commission. The Commission distributes technical reports and other relevant information received from all sources, in advance of hearings, to persons expressing an interest so that participants in the hearing process will be as well informed as possible on the matter under consideration. The hearing process also ensures that there is full public clarification of details of operations being reviewed.

Manitobans have the opportunity, through the hearing process, to participate in environmental control and to question operators of contaminant emitting industries, as well as government and other experts, and thus directly influence the decision-making process. Citizens of Manitoba have a clear right to be heard by the Commission whose orders have regulated potentially polluting enterprises in the Province. Individual citizens who participate in hearings can and do affect environmental decisions in this manner.

In providing a forum for public participation, together with information to ensure that such participation is meaningful, the Commission also provides a chance for all parties affected by an environmental matter to meet and learn about a potential problem and an opportunity to bring difficulties and concerns into the open. Sometimes the resulting intercommunication between interest groups will avoid or reconcile adversary situations. In order to facilitate participation, hearings are held in the community in which the matter under consideration is located.

Finally, the Commission considers that those who have a right to be informed of operations that may pollute the environment and to be heard regarding their concerns also have a right to be informed of the outcome of the Commission's deliberations. For this reason, copies of the Commission's orders or its report on hearings, including its recommendations for licensing, are forwarded to persons who participate in the hearings.

The Commission provides a sound basis for public participation in matters of environmental control. In order to function successfully, the system requires continuing public interest and active public participation. Positive and beneficial results occur when this ingredient is present.

After twenty years as Manitoba's primary environmental protection legislation, the Clean Environment Act was rescinded on March 31, 1988, when the new Environment Act was proclaimed. Under this new Act the role of the Clean Environment Commission will be different. The Commission will now hold public hearings and provide recommendations to the Environment Department who will be responsible for issuing a License. Formerly, the Commission issued the orders itself. Existing orders of the Commission now become Environment Department Licenses under the Environment Act.

The terms of the new Environment Act, which replaces the Clean Environment Act, will considerably broaden the scope of activities for which an environmental license from the Environment Department will be required. While the Commission will no longer be the licensing body, under the new Act it will continue to provide the facility for public participation where a legitimate public interest or concern has been identified and, following the hearing process and consideration of all evidence and argument received, will provide a report to the Environment Department with recommendations regarding the issuance of an environmental license under the Act. While it is not mandatory that these recommendations be adopted in whole or in part for the license, there are safeguards built into the Act such that the recommendations cannot readily be ignored and any deviations from the recommendations must be explained.

The Clean Environment Commission looks forward to continued broadly based and informed public participation in its future activities under the new Environment Act.

The Clean Environment Commission

During the 1987-88 year, Commission membership consisted of six citizen appointees and a full time chairperson, working with the support of a secretariat staff of three. The Minister responsible for the Clean Environment Act for the period under review was the Honourable Gerard Lecuyer, Minister of Environment and Workplace Safety and Health.

Members of the Commission were:

Mr. Stan Eagleton	Civil Servant, Winnipeg, Chairperson
Dr. Barrie Webster	Professor, Pesticide Research Laboratory, Department of Soil Science, Faculty of Agriculture, University of Manitoba, Vice-Chairperson.
Dr. Robert Aukes	Professor, Department of Agricultural Economics, Faculty of Agriculture, University of Manitoba, Winnipeg, Commissioner, resigned June, 1987.
Mrs. Mamie Hendren	Thompson General Hospital employee, Thompson, Commissioner.
Mrs. Agathe LaCroix	Legal secretary, Winnipeg, Commissioner, appointed July 15, 1987.
Mr. George Luther	Retired agricultural research worker, Winnipeg, Commissioner, Appointed July 15, 1987.
Mrs. Betty Pawlicki	Real estate agent, Winnipeg, Commissioner.

Background and Responsibilities

In 1968 The Clean Environment Act was enacted, replacing the former Pollution of Waters Prevention Act which was, until then, the main piece of environmental legislation in Manitoba. The Commission was created at that time succeeding the Provincial Sanitary Control Commission. Over the ensuing twenty years, in the Commission's exercise of its responsibilities, it held public hearings, conducted investigations of environmental matters, issued control orders for point sources of contamination of the environment and published reports on a variety of matters of concern in its area of jurisdiction. A tabular summary of these activities is contained on page 2.

During the past twenty years a total of 693 public hearings were held and the Commission issued or varied a total of almost 1500 orders. The numbers varied from year to year in accordance with the flow of matters requiring environmental regulation and in response to variations in the Commission's responsibilities in the regulating process.

A larger number of orders were issued annually during a period in the mid-seventies when the staffs of the Department and the Commission strove to overcome a backlog of proposals and applications that had accumulated following a revision of The Clean Environment Act in 1974.

These numbers began to drop off when a regulation was issued in 1973 to control livestock enterprises, relieving the Commission of this responsibility. Similarly, the number of regulating orders diminished when a new regulation covered insect control programs. During 1982 the Commission conducted a general investigation of insect control programs in Manitoba with a series of public hearings throughout the Province. The Commission recommended that insect control programs should be regulated by a permit issued by the Environment Department, and the resulting regulation followed this recommendation.

Under The Clean Environment Act the word "contaminant" was given a broad definition: any substance that is foreign to or in excess of natural constituents of the environment that is likely to affect the natural environment or be injurious to health or damaging to plant or animal life. Emissions considered included any liquid, solid, or gas and also such characteristics as odour, heat, sound, vibration and radiation. As a result of the scope of these definitions there was a capability to provide a wide spectrum of protection to citizens and to the environment from most pollution sources from which contamination of the air, soil or water could occur.

Specific application of the Act began with a requirement for registration by any person operating a plant, undertaking, or process which was likely to be a source of contamination. Registrations were filed with the Department where new operations were being constructed or where existing operations were to be expanded or modified. Registrations were also submitted to cover existing operations, sometimes following the receipt of complaints about emissions. Where there were no covering regulations, these registrations were referred to The Clean Environment Commission for the issuance of a control order. The Commission also received an environmental report and recommendations for appropriate control measures from Environmental Control Services of the Environmental Management Division.

Following this referral and receipt of the report, the Commission advertised its intention to make an order in appropriate newspapers as required by the Act. The Commission's advertisements provided a description of the nature and locations of the operations and stated that, if any person who was likely to be affected filed a representation in writing, the Commission would hold a public hearing in accordance with the statutory requirement contained in the Act. Copies of the environmental report prepared by the Department were forwarded by the Commission to the operators and to the municipalities in which the operations were located as well as to any citizens from whom requests had been received.

Following the holding of a public hearing, if such was required, the Commission proceeded to issue its control order. This order placed limits on the emissions and, as necessary, prescribed other appropriate terms and conditions. The order was legally binding on the applicant. The operation was then monitored by members of the Environment Department staff who could take enforcement action in the event the limits, terms and conditions were not being met.

Of approximately 100 orders issued during 1987-88, 65, or about two thirds related to the control of water pollution, twenty-six, or about a quarter related to air pollution control and seven were for activities where the principal risk of contamination was to the soil.

Fiscal year 1987-88 marked the last year of the Commission's operation under the provisions of The Clean Environment Act. This year was a time of increasing public interest in and concern about environmental matters and a considerable number of citizens participated in the regulatory process.

The many citizens who came forward at public hearings of the Commission to voice their concerns, make their complaints or recommend improvements, made valuable contributions to the management of environmental problems in Manitoba. Frequently, the proponents of developments and the operators of existing plants or processes benefitted from the experience of meeting their neighbours, and hearing their concerns. Participating citizens gained an understanding of practical difficulties and problems experienced by the operator in controlling the emission of a great variety of pollutants. On several occasions this hearing process provided a forum whereby the problems articulated and solutions discussed provided the basis for some continuing dialogue between the operators and their communities. The hearing process was also a source of guidance to administrators and policy makers in government because public reaction provides an indication of the socially acceptable limits.

The Clean Environment Commission 20-Year Operational Statistics

Year	Hearings	Orders Issued	Varied Orders Issued	Meetings
1968	0	0	0	9
1969	21	2	0	20
1970	80	78	0	43
1971	31	66	0	34
1972	48	88	0	27
1973	38	101	0	33
1974	44	105	17	28
1975	36	112	15	25
1976	38	131	10	33
1977	17	135	10	21
1978	20	62	10	21
1979	24	56	12	16
1980	16	48	6	14
1981	34	37	9	16
1982	24	47	9	23
1983	29	49	8	23
1984	31	54	9	29
1985-86	11	35	3	20
1986-87	31	34	8	22
1987-88	32	98	20	23
Totals	693	1338	146	480

Programs and Activities

Meetings and Hearings

In consideration of matters brought before it in 1987-88, the Commission held twenty-three business meetings. Conferences , including Environment Department representatives, were held whenever applicants wanted to question or discuss the terms of the control orders recommended to the Commission by the Environment Department. In some cases, the proponent made presentations to clarify complex plans or operations. On occasion, the Commission called in appropriate government department officials to explain recommendations received or positions taken in regard to matters under consideration. The discussion of differing positions often provided an increased understanding of the matter under consideration by both the Commission and the other parties. Such informal meetings were not arranged in circumstances where public hearings were held. In such circumstances there was a duty on the part of the Commission to ensure that all parties engaged in the hearing (including the application or developer, the public and the government departments involved) had an equal opportunity to hear all of the evidence and arguments being advanced and to ask questions in a public hearing forum.

During the fiscal year 1987-88 the Commission held a total of twenty-seven public hearings. Seven of the hearings arose from representations received from the public about projects or operations that had been proposed by the applicants and advertised by the Commission. Three hearings were held in connection with a review of new regulations proposed by the Environment Department for the control of sulphur dioxide and other air emissions from the non-ferrous smelters at Flin Flon and Thompson. At the request of the Environment Minister, twelve hearings were held throughout agricultural areas of the province for the investigation of farm crop residue burning practices. The subject of these hearings was later broadened to include the burning of peat. Four hearings related to the consideration of the variation of orders the Commission had issued previously and two were held to review existing operations for the consideration of appropriate order variation.

The public hearings took place in twenty-six locations throughout Manitoba (see page 4).

The following segments provide brief descriptions of a number of operations dealt with by the Commission during the period under review.

Air Pollution Control

Twenty-six control orders were issued in connection with operations likely to contaminate the atmosphere with noise, odour, vibration, particulates, or the more specific air borne contaminants. Of these orders, twelve were varied orders issued for quarries, five were for metal and scrap processing operations, four for paving and concrete operations, three for secondary lead smelters, and two for food-related industries.

Limestone Quarries – R.M. of Rockwood

Extensive beds of limestone underly large portions of the Interlake area, specifically the Rural Municipality of Rockwood. Several quarries in this limestone formation provide a large proportion of aggregate for use by the construction industry in the Winnipeg area. During 1987 a number of complaints were received by the Environment Minister from residents in the quarry area east of Stonewall. At the Minister's request the Commission held a public hearing in Stonewall May 14, 15 and 22, 1987 to review the existing orders regulating the quarry operations of a number of firms located in this area near the Town of Stonewall.

Many of the complaints centered on blasting operations required in the extraction of limestone. Some complaints had resulted from a co-incidence of unfavourable climatic conditions and improper blasting techniques that resulted in excessive noise and vibration. Equally prominent were complaints about nighttime operations. Residents testified these were causing annoyance and stress by depriving them of the reasonable enjoyment of their homes. Their sleep and recreational activities were being disrupted by the continuing noise of heavy equipment in the quarries as well as truck traffic to and from the quarry locations.

These quarries were operating under the provisions of control orders issued by the Commission in 1979 and 1981. The terms and conditions of these orders included provisions to limit noise emissions both from the blasting and from other quarrying operations. Testimony from the Environment Department indicated that, in part due to inadequate manpower for 24 hour noise emission enforcement, the existing control orders could not be adequately enforced. Efforts on the part of the Department to negotiate reasonable compliance had been unsuccessful. Quarry operators contended that extended hours of operation were necessary because the construction industry is geared to heavy peaks on a seasonal basis.

The Municipality, while endorsing the importance of the quarry industry's contribution to area employment and prosperity, was concerned with residents' complaints about nighttime and holiday quarry operations.

Following the hearings, the Commission issued revised orders to six operators, providing a prohibition against nighttime quarry operations between eight o'clock in the evening and six o'clock in the morning and on Sundays and statutory holidays.

These orders were immediately appealed by the quarry operators. In the process of considering the appeals, the Minister held a meeting with some of the operators and representatives of the citizens who had intervened at the hearing. With the approval of an Order-in-Council, the Minister directed that the quarry orders be varied to clarify the terms governing "emergency conditions" for blasting and "statutory holidays".

Secondary Lead Smelters in Winnipeg

Secondary lead smelters in Winnipeg were amongst the first clients dealt with by the Commission when the Clean Environment Act was proclaimed. A public hearing was held to receive evidence and representations about the smelters in May, 1972 and control orders were issued in May, 1973, providing limits on the emission of particulates and lead to the atmosphere and requiring the Companies to carry out emission testing and analysis to confirm compliance. These orders were updated in 1976 and 1977. However, a Manitoba Regulation was passed in June, 1977, exempting secondary lead smelters from registration under The Clean Environment Act. This action was taken in view of the control exercised by Canada under the *Clean Air Act* in the *Secondary Lead Smelter National Regulations*. Thereafter the administration of lead-related regulatory function devolved upon officials of Environment Canada.

Concerns continued about the emission of sulphur dioxide, sulphur dioxide mist and related odours, which were not covered by the federal regulations, as well as about compliance with the level of lead emissions required under the federal regulation. In the case of two smelters, sulphur emissions originated from their practice of melting down plates from batteries that formerly contained sulphuric acid.

As a result of concerns and complaints, the Environment Department, in October, 1986, moved to repeal the regulation exempting the smelters from the Manitoba registration procedures and, in 1987, referred new registrations for the three smelters to the Commission. After advertising these operations and not receiving notice from any affected citizen, the Commission issued new control orders for the smelters in November and December, 1987. These

Public Hearings – Locations

The Pas	April 13, 1987	Dugald	October 30
Stonewall	May 14-15	Carman	November 4
Thompson	May 26-27	Elie	November 5
Flin Flon	May 27-28	Whitemouth	Nombember 30
Winnipeg	June 4-6 &	Lac du Bonnet	December 2
	November 3-4	Rossburn	December 7
Winnipeg Beach	June 9	Portage	December 10
Neepawa	June 25	Teulon	December 17
Otterburne	August 21	Oak River	February 23, 1988
Russell	September 20	Headingley	March 10
Gross Isle	October 20	Morden	March 11
Oak Bluff	October 23	Sherridon	March 22
Niverville	October 26		
Brandon	October 27		

Further details of these hearings are given in Appendix "B" to this report.

orders contained new limits on the emission of sulphur compounds as well as retaining the limits on lead and other particulates in accordance with the federal regulations.

Steel Brothers Canada Ltd.

For many years this Company ran two major operations in Manitoba. One was a limestone crushing plant on Pembina Highway in Winnipeg and the other a limestone quarry and lime kiln at Faulkner in the Interlake region. The proximity to retail sales operations brought about repeated complaints about dust emissions from the limestone crushing operation of the Winnipeg plant. The Commission held hearings in November 1981, February 1982 and in March, May and June of 1983. A series of control orders, issued following these proceedings, imposed limits on dust emissions.

Finally, in May, 1987, Steel Brothers filed a proposal for the transfer of this operation to Faulkner where a new plant with air pollution control equipment was built adjacent to the existing Faulkner facilities. The Commission did not receive any complaints or representations from Faulkner citizens and a control order for the new plant was issued in October, 1987.

Recycling of Scrap Metal

(a) Mandak Metal Processors, Ltd.

This firm has, for many years, reduced surplus and worn out railway boxcars to useable scrap. Scrap reclamation was facilitated by burning wooden parts of box cars before cutting the metal components into manageable pieces. The Commission issued its first order for this operation in 1972, setting limits, terms and conditions. Following this, a series of orders regulated the operation, the latest issued in 1984 following appeal of a previous order. This order called for the Commission to review the operation in the spring of 1987. Accordingly, after advertising the review and not receiving any public response, the Commission met with representatives of the Company and the Environmental Management Division to review the Company's performance in recent years. This review revealed that the number of railway cars suitable for the recycling techniques used by the Company was expected to decline in coming years. Following the review the Commission issued a new control order requiring that the matter be reviewed again in five year's time.

(b) General Scrap and Car Shredder Ltd.

This is another of the companies for which the Commission held a hearing in the first few years of its work – in 1973 – when the first of a series of control orders were issued setting limits and conditions for the operation. General Scrap operates a high volume automobile shredder unit which reduces vehicles and other surplus machinery and components into smaller pieces suitable for recycling. This operation creates noise and, in its early years, also produced smoke from burning to separate non-metallic items from vehicles. By 1980 the Company was prepared to upgrade its operation by the substitution of a non-polluting process for the removal, sorting and disposal of the non-metallic scrap.

In 1987, a considerable number of complaints were received by the Minister of Environment about explosions that occurred in October and November on the Company premises. Also, in November, the company filed a new proposal to burn boxcars on railway trackage at or near its existing operation. In February, 1988 the Commission held a hearing to receive evidence and representations. At that time, the operator withdrew the proposal for boxcar burning which had been the subject of numerous objections.

The operation had been started in a relatively wide open and undeveloped rural area in the Rural Municipality of Springfield, but this area was being encroached by urban development taking place in the Winnipeg Community of East Kildonan-Transcona, now approximately one kilometre from the plant. The neighbors had strong objections to explosions at General Scrap. With the large volume of vehicles handled, the Company found it very difficult to ensure that there were no potentially explosive components present. Constructive measures had been undertaken which resulted in eliminating explosions over a two-month period prior to the hearing, and these measures would be continued and improved. Residents were anxious to impress on the Commission that they wished only reasonable compliance from the Company and did not want to put the operation out of business.

(c) Daniel Hofer, Lakeside Colony Farm

Smoke from another scrap recovery operation was the cause of many complaints received by the Environment Department and the Commission. Lakeside Colony Farms is a Hutterite farm colony, located near the Headingly area of Winnipeg, in the Rural Municipality of Cartier. The Commission held a hearing in Headingly in March, 1988. The hearing was attended by a large number of residents who complained about smoke emissions from an operation where electrical equipment and power cable were being burned to remove insulating material and other impurities. Burning took place on the ground without the use of any incinerator or emission control systems. The scrap was being trans-

ported from Winnipeg and the stripped wire and other burned out apparatus were, in turn, transported to scrap dealers in the City. Fears were expressed by residents about the possibility of harmful contaminants being formed by the low temperature combustion of the insulation and other materials. Evidence was received that at least one transformer containing PCB-contaminated oil had been on the site of the operation. The Commission issued a control order setting stringent limits and conditions on the operation to prevent the open burning of electrical equipment, the burning of oil, rubber or railway ties and also requiring the use of an approved combustion unit with appropriate pollution control equipment if the operation was to continue.

Nu-West Alloys

A new non-ferrous foundry operation was established on Logan Avenue in Winnipeg by Nu-West Alloys. The proposal for this plant was advertised by the Commission but no expressions of concern were received from persons likely to be affected. The foundry recovers brass, bronze and aluminum ingots from scrap. Appropriate air pollution control equipment was included in the plant design. The Commission issued a control order setting limits, terms and conditions on the operation of the foundry.

Western Engine Limited

Another new metal processing plant dealt with by the Commission was the specialized hard chromium plating plant set up by Western Engine Ltd., in Winnipeg. This plant reconditions parts for aircraft cylinder head assemblies, rail locomotive crankshafts and other purposes by hard chrome plating, tempering, precision grinding and finishing. The plant was located in an industrial area on Madison Street. The Commission issued a control order for this plant providing limits on the emission of particulates, chromic acid mist, and the opacity of visible emissions from the process.

General Foods Inc. Winnipeg

General Foods Inc. registered the operation of the Melrose Coffee plant, taken over from Nabisco Foods Ltd., located off South Waverley Street in Winnipeg. The plant roasts and grinds coffee for the retail trade and is provided with cyclones and fabric filters to control particulate emissions and an after burner to reduce the emission of odours. The Commission's control order limits emissions and requires that pollution control equipment be operated at all times when the plant is in operation.

City of Winnipeg Wastewater Treatment Plants

From the advent of the Clean Environment Act, the Commission has not had the responsibility for setting limits with regard to water pollution control matters within the City. This was delegated to the City itself by the Province. Regulation of appropriate air pollution control matters was left in the hands of the Commission.

(a) North End Water Pollution Control Centre

The City has a continuing program to update, upgrade, and increase the capacity of the north end wastewater treatment plant on North Main Street to keep up with the increasing wastewater load and to incorporate improved methods of treatment. This program has included measures designed to improve the plant's performance in the control of odour emissions.

The record of complaints has improved in recent times and City officials felt the plant could, in all likelihood, meet the odour control recommendations proposed by the Environmental Control Services Branch of the Department of Environment. Occasional, brief exceedences could not be ruled out in case of process upset, equipment breakdown or unfavourable atmospheric conditions. For this reason, the City administration's counterproposal was that the odour limitations should be made to apply with allowance for ten exceedences per year, during the period from the issuance of the control order to September, 1993. At that time the decision would be made by the City whether to take other measures to improve air pollution control. No objections were made by the City to the other limits, terms and conditions being recommended by the Environment Department. These included limits on the emission of particulates, noise and visible emissions. These recommendations were the basis for a control order issued in March, 1988.

(b) South End Water Pollution Control Centre

During their presentation to the Commission, City of Winnipeg officials described the south end wastewater treatment plant which processes some fifteen percent of the sewage generated by the City. Plans for the ensuing five years provided for the plant facilities to be doubled in capacity, with an odour dispersion stack to be installed as part of the expansion. The delegation emphasized that Plan Winnipeg had contained a provision for a one-kilometre buffer zone to be preserved around the plant to prevent land use conflicts. The City representatives stated the plant would be in a position to comply with the limits, terms and conditions for odour being proposed by the

Department of Environment, as soon as their plant expansion had reached completion in 1991. The plant would be in compliance with all of the other limits and conditions from the date of issuance of the order.

Having previously advertised its intention to issue control orders for the regulation of emissions to the atmosphere from the plant and, having received no objections, the Commission proceeded to issue a control order on the plant in March, 1988. The order set limits on visible emissions, particulates and noise. These limits came into force on the date of issuance except for odours, for which the recommended limits would come into force on July 1, 1991.

Water Pollution Control

Of the three categories of orders issued for control of contamination of water, air and land, the greatest number, sixty-five, related to water pollution control. Of these, over ninety percent had to so with the treatment and disposal of domestic wastewater. Other operations covered included two mines, two municipal swimming pools, one municipal water treatment plant and one industrial plant.

Municipal Wastewater Facilities

a) Town of Morden Sewage Lagoon Expansion

During recent years the population of Morden has been expanding with a resulting increase in the load being placed on the wastewater treatment lagoon system. This additional loading had necessitated recurring requests for discharge of the lagoon during a period of the year when discharge was not normally permitted. The necessity of corrective measures had been a matter of discussion between the Town, Environment Department representatives and the Commission for some time. The Town's consultant filed a proposal for the expansion of the system by the addition of another lagoon cell. At the same time, to address the seepage of lagoon contents alleged to be taking place, the proposal called for the installation of an underground drain system.

This proposal was discussed at a hearing held by the Commission in Morden in March, 1988. Town representatives pointed out that the lagoon was urgently needed to enable planned residential and other expansion developments to go forward. Representatives of the Department of Environment expressed concern about the adequacy of the designed seepage control measures. The project consultant explained measures being recommended to counteract any seepage problems. They believed these measures would be more than adequate to prevent the development of any future problems, and correct any existing ones. Following the hearing, the Commission issued a new control order providing the mandatory inclusion of the precautionary measures recommended by the consultants, with an additional requirement that collected seepage liquid be returned to the treatment facility during the winter months when discharge to Dead Horse Creek might result in drainage problems.

(b) City of Flin Flon Sewage Treatment Plant

The Flin Flon wastewater treatment plant is located, and discharges its effluent, within the boundaries of Saskatchewan with the effluent returning to Manitoba waters shortly thereafter. An agreement between Manitoba and Saskatchewan was necessary to make the provisions of the Clean Environment Act applicable under these conditions. Recommendations filed with the Commission by the Environmental Management Division called for a review of the operation with a view to preparing a plan for upgrading the facility. The control order issued by the Commission specified a three-year interval before a plan was to be submitted.

(c) Town of Winnipeg Beach, Wastewater Treatment Lagoon System

The Winnipeg Beach wastewater treatment lagoon facility has been considered by the Commission a number of times. In the spring of 1987, the Town requested a further variation of the control order, already varied following an earlier appeal. On receipt of this request the Minister of the Environment directed the Commission to hold a hearing and submit a report and recommendations to him. Accordingly, the Commission held a hearing in Winnipeg Beach in June, 1987, and filed its report with the Minister shortly thereafter.

The variations requested related to an extension of time for certain provisions that would limit the use of wastewater pumpout trucks in connection with the wastewater collection still in use pending completion of a piped sewage collection system being installed for the Town. The Commission recommended acceptance of the extension requested and, on receipt of the Minister's direction, assented to by an Order-in-Council, the Commission issued a varied order to this effect. The impression left by the hearing was that satisfactory progress was being made toward the implementation of the Town Council's plan for full wastewater service, an improvement which had been under development over a period of several years and was expected to be in full service by the end of 1988.

d) Oak River Wastewater Lagoon

A hearing was held by the Commission in this community in connection with its wastewater problems. Oak River is located in the Rural Municipality of Blanshard, north of Rivers. The Commission had been aware, for some years, that there existed a problem relating to the seepage of wastewater lagoon contents in a manner alleged to be affecting neighbouring land. The matter was fully explored at a hearing in Oak River in February, 1988 when the parties explained their positions and the Department of Environment's representative recommended that the Commission require the Municipality to file a plan for upgrading the lagoon within a year and to carry out the upgrading within two years. Following the hearing the Commission issued its control order stipulating these conditions.

e) Upgrading and Expansion of Municipal Facilities

In addition to the foregoing lagoons dealt with by the Commission in the current fiscal year, several other lagoons were about to be expanded or upgraded. Two of these were at **Ashern** and **Lundar** in the Interlake, where larger facilities had to be built. Also expanded were the **Gilbert Plains**, **Carman**, **Oakville** and **Morris** wastewater lagoons. In the case of Morris, the effluent, rather than being discharged entirely to the Red River, was to be used to irrigate the golf course, after being adequately treated. The Commission issued control orders for each of these wastewater treatment systems during fiscal 1987-88.

f) Sewage Systems Needing Review

In addition to upgraded lagoons, it is appropriate to point out that a number of existing facilities needed upgrading or modification to meet normal environmental considerations. Included in this category was the aerated lagoon system serving the **Town of Boissevain** where the Mayor and Council attended a Commission meeting as a delegation to question whether a proposed new control order requiring the re-study of the system and the assessment of means of achieving a better quality output was justified. They pointed out to the Commission that it was likely that enhanced performance of the system could only be brought about by the expenditure of substantial funds both for capital outlay and as part of the annual operation and maintenance expense. Department of Environment representatives detailed their reasons for requesting the study and, in the end, the Town delegation withdrew its objections to proceeding with the study, with the matter to be taken under review again when the study results were available.

Other systems needing renovation included those serving the **Town of Killarney**, the **Town of Oak Lake**, the **Town of Rivers** and the unincorporated **Village district of Whitemouth**. After reviewing reports recommending upgrading action, the Commission issued control orders calling for appropriate studies and, in many cases including a requirement for the upgrading to be carried out within a specified time interval over the next few years.

In two cases new control orders became a technical requirement when the local jurisdictions decided on a change in the routing of the treated effluent from their wastewater facilities. One of these was for the **Village of Rosenort**, where a new discharge route was adopted to protect a water supply. In the case of the **Elm Creek** wastewater treatment lagoon system, the change related to the use of certain local ditches in preference to those used previously with the eventual drainage continuing to go to the Bryson Drain, as in previous years.

g) Town of Beausejour

A proposed new discharge route for lagoon effluent was not approved by the Commission. The request involved diversion of effluent from the Beausejour wastewater treatment lagoon system to a discharge point upstream of the present location on the Brokenhead River. The proposal by the Town was advertised in the normal manner in Winnipeg and Beausejour newspapers, with notice being forwarded at the same time to the local government authorities affected. No complaints or representations were received, except from the Fisheries Branch, so the Commission did not call a public hearing. A meeting was convened with officials of the Town, the Rural Municipality of Brokenhead, the Fisheries Branch and the Department of Environment. This was also attended by two citizens, who had just learned of the matter. The Commission would have held a hearing had they been aware of the public concerns. However, the less formal meeting took on the aspects of a hearing when all facets of the question were examined with input from the concerned citizens.

Effluent from the sewage lagoon operation had been discharged through a system of drains, northward to a point where it was discharged into the Brokenhead River, downstream of the Town. The concerns of both Fisheries and the residents related to the proposed point of effluent discharge being upstream of a series of residences and a desirable fishery habitat.

The residents' concern was about additional water quality degradation caused by the proposed effluent

discharge. The Fisheries Branch concern was about the potential impact of un-ionized ammonia in the effluent on the fishery. The Consultant, on behalf of the Town, had selected the new discharge route to correspond with a location that might be selected for future lagoon expansion. The Commission declined to vary the existing control order, with the matter to be subject to further consideration when plans for the new wastewater treatment system are proposed by the Town.

h) Local Government District of Alexander

Mr. Dave Dufour filed a proposal for the construction of a privately owned wastewater lagoon system designed to serve both his trailer park and other facilities within the municipal district. In recent years there had been new development taking place north of the Winnipeg River opposite Powerview, in the **Chevrefils** settlement and there were discussions about the eventual need for wastewater facilities to be constructed. In 1987, with the concurrence of the Council of the Local Government District and after obtaining the necessary agreements with his neighbours, Mr. Dufour decided to provide this service in a facility built and operated by himself. The Commission proceeded to issue a control order for this development.

i) Northern Communities – Wastewater Systems

Ten control orders were issued to the Department of Northern Affairs and to community councils in remote settlements in mid and northern Manitoba. These included orders for sewage lagoons serving the Communities of **Cormorant**, **Crane River**, **Camperville**, **Duck Bay**, **Barrows**, **Moose Lake**, **Norway House**, **Seymourville** and **Pikwitonei**. One order was for the sewage treatment plant on Seymour Island in Island Lake serving the **Island Lake Community**. A number of orders were re-issued for modification to wastewater treatment plants, including the **Town of Snow Lake**, **Town of Leaf Rapids** and the **Local Government District of Grand Rapids**. At the same time an order was issued to cover the wastewater treatment lagoon serving the Grand Rapids townsite area for Manitoba Hydro employees associated with the hydroelectric power station. The consideration of all of these operations was advertised by the Commission. In places where there were no local newspapers, posters were prepared by the Commission and posted in the communities, inviting enquiries or statements of concern about these operations. Following this public notification, orders were issued by the Commission after consideration of all evidence and representations received.

j) Non-sewage Sources of Domestic Wastewater

Proposals received by the Commission for consideration included a number of water treatment plants serving the Towns of Carman, Portage, Souris and Morden. In the first three of these registrations, it was found there were a number of matters needing further consideration. The installation of settling ponds had already taken place in Morden to control the residue from lime and soda ash softening being released from the wastewater of the water treatment plant. There were no citizen objections received following the Commission's advertisement, and after discussions with a delegation from the Town of Morden, the Commission issued its control order.

The Commission also received registrations for two swimming pools. These pools were located in the Towns of Carman and Steinbach, where effluent resulting from the backwashing of their filtration systems was discharged to local waterways. No objections were received following the advertisements of these discharges, and the Commission issued control orders setting limits, terms and conditions on these operations.

Wastewater Facilities Serving Parks

a) Department of Natural Resources, Clearwater Lake Provincial Park Wastewater Treatment Lagoon

The most interesting and important of the provincial park wastewater proposals dealt with in 1987-88 was one intended to serve the Clearwater Provincial Park Recreation Area near The Pas. Based on a lake renowned as one of the most crystal clear and pristine lakes in the world, Clearwater Lake Recreational Area had for years attracted increasing numbers of cottagers and recreational users. In spite of the precautions taken, the resulting wastewater threatened to overload existing disposal facilities and cause unacceptable levels of contamination. The Department of Natural Resources prepared plans for a new lagoon system, but this plan was objected to by area residents, lodge operators and park visitors.

No major work had been done on the project prior to its referral to the Commission, but there had been land cleared in the designated location and this had alerted park users to the plans. When the Commission advertised the proposal in January, 1987, a large number of complaints were received, petitions were circulated and public protest meetings were held in The Pas. As a result of the interest the Commission held a public hearing in The Pas in April, 1987, which was attended by a large crowd of concerned citizens.

A major point of complaint was the intention to discharge the treated effluent from the lagoon, via a swamp and small lake, to Clearwater Lake. Fears were expressed that there could be bacterial contamination. However, there was assurance that the method of treatment would eliminate this problem, also that there would be a discharge of effluent from the lagoon only in the fall of the year when there was no recreational use of the waters. It was recognized that the effluent would be likely to contain plant nutrients, such as nitrogen and phosphorus, and that these might possibly cause the development of weeds and algae in the Lake. Because of the unique ecological situation of the Lake, the Commission issued a control order for this operation in April, 1987, providing that, in addition to complying with the normal effluent quality standards, the applicant would not be permitted to discharge the effluent from the proposed lagoons anywhere within the Clearwater Lake drainage area.

b) Other Provincial Park Wastewater Facilities

The Commission dealt with registrations for five other provincial park wastewater treatment facilities in 1987-88. All of these facilities were advertised by the Commission in Winnipeg and regional newspapers in areas where the parks were located. Unlike the Clearwater Lake operation, however, no indications of interest or concern were received from the public, government departments or other sources and the Commission proceeded to issue control orders for them without holding hearings. Orders for wastewater treatment lagoons serving the **Adam Lake campground** in Turtle Mountain Provincial Park and for the **Toniata Beach campground** in the Whiteshell Provincial Park were issued in January and March, 1988, respectively. An order was also issued for the wastewater treatment plant serving the **Norquay Beach campground** in February, 1988. In March 1988, control orders were issued in connection with septic tank and field operations serving the **White Rock** and **Brereton Lake campgrounds** in the Whiteshell Provincial Park.

Wastewater Facilities Serving Educational Institutions and Schools

In addition to an order issued to the Winnipeg Bible College for a wastewater treatment lagoon operation, the Commission issued control orders to the Red Rock Bible Camp and to six other institutions for their sewage facilities. Most of these were for schools in rural and semi-isolated locations.

Of the other operations, only two were wastewater treatment lagoons, the others being mechanical treatment plants. One of the lagoons was operated by the Rolling River School Division serving the **Elton Collegiate** and the **Forrest Elementary School**, located in the hamlet of Forrest Station, near Brandon. A second lagoon was operated by the Manitoba Department of Government Services to serve the **Bannock Point Rehabilitation Camp** located in the Whiteshell Provincial Park. Other operations dealt with were mechanical treatment plants serving the **Lockport Junior High School** and the **St. Andrews Elementary School** of the Lord Selkirk School Division. Other orders were issued covering the operation of mechanical wastewater treatment plants servicing the **Berens River School** and **Wanipigow School** of the Frontier School Division No. 48.

Hutterite Colony Farm Wastewater Facilities

As in previous years, in 1987-88 the Commission continued to receive a number of wastewater treatment lagoon proposals registered by Hutterite colony farms for their wastewater facilities. Five of the lagoons discharged intermittently into drains leading to bodies of water and two were to discharge to farmland for irrigation purposes.

The colony lagoon operation that caused the greatest constroversy was registered by the **Interlake Colony Farms Ltd.**. in the Rural Municipality of Rockwood, with discharge of treated effluent twice in each year to Netley Creek. The lagoon was proposed to replace an existing septic tank and field operation which had been identified as inadequate by the Environment Department. Even before the Commission's advertisements for this operation were published in the local and Winnipeg newspapers, notice had been received from the Rural Municipality requesting a public hearing. Following publication of the item a large number of objections were received from neighboring farm residents and property owners located downstream on Netley Creek. The hearing in Teulon on December 17, 1987 was well attended.

During the hearing the Colony's engineering consultant described plans for the construction of a conventional sewage lagoon system located on Colony property with discharge of lagoon effluent to Netley Creek. The cottage owners, most of whom owned properties located along the Creek, complained of poor quality water in the Creek at present and feared that the lagoon discharge would further aggravate this condition. The objections from residents whose homes were located on the creek adjacent to the colony land were even stronger. There were concerns that well water could be contaminated and that nuisance conditions could be created. Expert witnesses pointed out that the Creek was the

recipient of effluent from the Teulon lagoon system and that the contributions from the Colony lagoon would be of a very much smaller order. It was also noted that the downstream portion near the mouth of Netley Creek was subject to wind induced backwater form the Red River. Netley Creek has its confluence with Lake Winnipeg nearby and this could be expected to affect the quality of the water in Netley Creek in the lower reaches of the Creek.

After listening to the concerns expressed by those attending the hearing, the Colony's engineering consultant undertook to investigate the possibility of moving the location of the lagoon cells and also whether it would be possible to direct the lagoon effluent to a provincial drain on the western boundary of the Colony property, thus bypassing the nearest of the concerned residents before the lagoon effluent would enter Netley Creek via the provincial drain. Following the hearing the Commission received notification from the Colony's consultant confirming that these adjustments to the original plan had been adopted.

Control orders were issued for sewage lagoon systems serving six other farm colonies. Four of these related to lagoons discharging into streams or ditch systems. These included the **Star Lite Farms Ltd.** near Starbuck in the Rural Municipality of Cartier, the **Sunnyside Colony Ltd.**, south of Portage la Prairie in the Rural Municipality of Portage la Prairie, **Grand Colony Farms Ltd.**, south of Oakville also in the Rural Municipality of Portage la Prairie and the **Westroc Colony Farms Ltd.**, in the Rural Municipality of Westbourne. Two colonies based their sewage effluent discharge systems on disposal of the treated effluent for irrigation of their croplands. These were the **Greenwald Colony Farms Ltd.** in the Rural Municipality of St. Clements and the **Concord Colony Farms Ltd.** located east of Stony Mountain in the Rural Municipality of Rockwood.

Industrial Wastewater

a) Granges Exploration Ltd., Tartan Lake Mine

At the beginning of 1987 the Commission received a report prepared by the Environmental Control Programs Branch on this gold mining project. The report outlined the Company's plan for development of a gold mine and mill complex at Tartan Lake, located approximately sixteen kilometres northeast of Flin Flon. Effluent was proposed to be discharged to the designated tailings area, a small unnamed lake one kilometre southeast of the mine, with drainage from there to Tartan Lake and the downstream lakes and streams of the Pineroot River system. The proposed operation included the treatment of the gold ore concentrate by a cyanidation process; however, the design of the processing plant included facilities for the treatment of the effluent by a hydrogen peroxide process which was expected to reduce cyanide in the effluent to a concentration within the limits recommended by the Environmental Control Programs Branch.

As a result of local concerns the Commission held a hearing in Flin Flon, March 30, 1987. Present at the hearing were representatives of the Lake Athapapuskow Cottage Owners' Association, who expressed a concern for the waters downstream of Tartan Lake. Also present were representatives of the Fisheries Branch of the Department of Natural Resources, which had also expressed concern that the mine and mill effluent discharged must be appropriately treated so as to safeguard the important sports fishery in the watershed. During the hearing, the milling and treatment processes and effluent quality were discussed in detail. The Commission requested additional baseline water quality monitoring data. This was subsequently furnished by the company's consultant. When this material was in hand, the Commission issued its control order prescribing limits on the quality of the effluent including the concentration of arsenic, copper, lead, nickel, zinc, cyanide and suspended matter. In addition the order specified that an extensive effluent mapping and analytical program be carried out.

b) Snow Lake Gold Corporation

Also at the beginning of 1987, the Commission received a proposal including an environmental impact statement, filed by UMA Engineering Ltd. on behalf of the Snow Lake Gold Corporation.

The proposed gold recovery plan has its basis in the development of a method for using micro-organisms to treat the arsenical process residues left over from the Nor-Acme Mine, formerly operated by the Howe Sound Exploration Company (later the Britannia Mining and Smelting Company Limited) at Snow Lake between 1949 and 1958. These residues remained on the site as the former operators had not developed a feasible and acceptable means of extracting the gold from the approximately 250,000 tons of arsenopyrites stockpiled on the mine site during gold mining operations. The proposed plan was to build a new plant to concentrate the gold by bioleaching, cyanide leaching and carbon-in-pulp extraction. The concentrate was to be sent elsewhere for refining of the gold.

Plans called for the development of two new tailings areas, one containing arsenic residues and the

other containing cyanide residues. Both of these areas were to be so constructed as to prevent seepage of any liquid or the migration of contaminants off the site of the operation. Favourable recommendations were made by both Fisheries Branch and Environment Department representatives in consideration of the fact that the Company's plans would result in a considerable improvement of the existing condition of the unattended residue pile. No concerns were expressed by local residents or other organizations. The Commission issued its control order in December, 1987, prescribing suitable limits for the proposed operation.

c) Pioneer Metals Corporation – Puffy Lake Mine

A third gold mining and refining operation was reviewed by the Commission during the year. Pioneer Metals Corporation filed a proposal similar to that received from Granges in connection with Tartan Lake. The new gold mine and refinery was established near Ragged Lake, thirty-five kilometres southeast of Sherridon, Manitoba. Ore was to be mined and milled on site with a cyanide process being used. Provisions were made for the installation of a treatment process to remove cyanide from the process wastewater by the use of hydrogen peroxide. Treated wastewater and tailings solids were proposed to be discharged to Ragged Lake, the designated tailings area, with drainage from there to Puffy Lake.

After an expression of concern was received by the Commission from the Sherridon Community Council, a public hearing was held in Sherridon in March 1988. At the hearing, Sherridon residents expressed concern about leachate from abandoned tailings residues from former mining activity in the area that was held responsible for degrading the water quality of a nearby small lake. Opinion was strong that similar environmental damage from the new mine must be prevented. Company representatives explained their proposal would ensure minimal environmental impact and the representatives of the Environment Department outlined their recommendations for limits, terms and conditions to be imposed on the operation to regulate and control the tailings pond effluent.

Following the hearing, the Company filed with the Commission further proposals for management of the tailings residue pond effluent and the Mines Branch of the Manitoba Department of Natural Resources also filed a submission relating to the same subject. Due to the proclamation of the new Environment Act at the end of March, 1988, there was not sufficient time for the Commission to circulate these comments to the various parties and receive their comments, as would have been required under the Commission's old hearing procedures. As a result, no control order was issued and the matter was referred to the Department of Environment and Workplace Safety and Health to be dealt with under the provisions of The Environment Act. Subsequently, the Commission's recommendations for licensing of the operation were made to the Department and a license was issued under the new Environment Act.

d) Town of Neepawa, Springhill Farms Limited, Wastewater Control

A major hog killing and dressing plant was established in Neepawa in 1986. An important aspect of the project was to develop a wastewater treatment facility to protect the water quality of the Whitemud River. As well as organic wastes and pathogenic micro-organisms, the waste also contains high levels of nitrogen. A public hearing was held by the Commission with representation from the proponent, government agencies and downstream water users. A control order was issued in July, 1986 setting limits on contaminants such as organic matter and bacterial content and also on total chlorine and ammonia in order to protect the fishery in the River.

Due to the size of the operation, the extensive nature of the treatment facilities and the need for establishing appropriate microbiological and hydraulic regimes within the process system, it took some time to bring the system into effective operation. However, by June 1, 1987, the system was reported to be in full compliance with the limits established by the order, except for the amount of un-ionized ammonia. Because of difficulty in meeting the ammonia limit, arguments were advanced by the Manitoba Water Services Board acting for the Town of Neepawa, that the limits on this substance as set in the control order were unnecessarily stringent and a variation in the contents of the order was requested by the Town.

In June, 1987, the Commission temporarily suspended some relevant clauses of the order and convened a hearing in Neepawa to deal with the matter. At the hearing, arguments were advanced by the Town, Springhill Farms Ltd. and the Manitoba Water Services Board favouring variations to the order that would enable the plant to continue in operation while the treatment process developed better performance characteristics over an additional period of time. It was also expected that a better understanding of the complex relationships in the treatment process, improvements in plant procedures and recycling of wastewater components to reduce the

volume discharged would also result in an improved effluent quality.

The Commission issued a varied order in July, 1987, providing for a higher seasonal allowance of the amount of ammonia that could be included in the plant discharge based on a schedule taking into account stream flow and temperature considerations during the remainder of 1987. This modified schedule of ammonia concentrations was to apply until January 1, 1988.

e) CSP Foods Ltd., Harrowby – Wastewater

In another matter relating to the food industry, the Commission held a hearing in Russell on April, 1987 to consider a request by CSP Foods to vary the existing order regulating the release of effluent from its Harrowby vegetable oil crushing plant to the Assiniboine River. When the original design of the plant was made, the designers predicted that there would be no need to discharge any wastewater from the plant site.

Evidence given by the Company representatives indicated that two unexpected extraneous sources of ground water inflow had occurred. The much higher than expected volumes of water thus produced, while not large in scale or offensive in nature compared with other normal industrial effluent, were nevertheless in excess of the zero limits required by the Commission in its control order of July, 1982. At the hearing a representative of Manitoba Environmentalists Inc. discussed general principles of environmental protection and expressed concerns about how they were being applied to the operation under review. Following the hearing the Commission issued a new control order making provision for the discharge of wastewater to the River in accordance with the quality limitations prescribed.

f) Other Industrial Wastewater Sources

Most of the other industrial wastewater discharges regulated by the Commission during the year, while classified as "industrial" were, in fact, minor sources of fully treated domestic sewage effluent. These included the domestic sewage treatment plants serving the staff at the **Manfor** plant near The Pas and the small staff of the **Manitoba Hydro generating station** at Jenpeg. Another industrial source dealt with was a minor wastewater lagoon operation serving the **Pioneer Meats Ltd.** abattoir southeast of Altona in the Rural Municipality of Rhineland. The history of this operation indicated that it had not been necessary, thus far, to discharge the lagoon. The Commission issued control orders for each of these operations during the fiscal year.

Control of Pollution of Soil

Lagoon Seepage and Septic Tanks Systems

A number of the lagoon operations have impacted the soil resulting in the degradation of nearby arable land. Several lagoons designed for treatment and storage and subsequent discharge to receiving streams have never or rarely been discharged. In these instances, the control orders issued prescribed a study to correct this condition. Several orders were issued for wastewater pollution control systems being discharged to septic tank and soil absorption systems. There was some concern that the inability of the absorption field to assimilate the effluent could impact nearby lakes.

Use of Sewage Effluent for Irrigation

The Commission has been approached from time to time to approve the use of sewage effluent from properly designed and operated sewage lagoons for the irrigation of farmland and golf courses. In a Province where there is often a moisture deficit, the use of treated effluent from sewage lagoon systems is a reasonable irrigation option. It avoids the discharge of effluent into intermittent streams or to lakes where the addition of unwanted plant nutrients could be detrimental. Nutrients added to the land along with the water are beneficial to crop growth.

In 1987-88 control orders were issued for three such operations. The **Town of Morris**, in addition to having the option of discharging effluent into the Red River, was permitted to use effluent for golf course irrigation, under prescribed conditions. The **Concord Colony Farm** east of Stony Mountain and the **Grenwald Colony Farm**, north of Beausejour were also permitted to discharge treated lagoon effluent from their own domestic lagoon to nearby agricultural land with appropriate restrictions to protect the agricultural food chain.

Investigations

Hazardous Waste Management

The Commission's last two annual reports have given accounts of the programs conducted and progress achieved in Phase One of the Province's hazardous waste management program.

The start of the fiscal year under review saw the Commission at work on its report of fourteen hearings held throughout the Province in November and December of 1986 and January of 1987. These were the second round of hearings held for the purpose of informing the public about the proposed hazardous waste management program and obtaining public input concerning the nature and extent of

the treatment facilities needed. The following specific terms of reference had been given to the Commission by the Minister.

1. Based on the Department's report outlining the specific hazardous and special waste situation in Manitoba, the government's action plan, an appraisal of present treatments and capabilities, current technology available, Hazardous Waste Management Cost Analysis Report and options for implementing a comprehensive waste management system, the Commission shall solicit public opinion and involvement and provide government with recommendations for a preferred system option.

2. In conjunction with the determination of a preferred option, the Commission shall provide the government with recommendations on an effective mechanism for public input and involvement in the process to select whatever sites might be required as part of the management system, and recommendations as to ongoing public involvement relative to the actual operation of the eventual system.

3. The Commission shall solicit public input and provide the government with recommendations on candidate site selection criteria. The criteria should address public concerns with respect to the siting of a facility or components of facilities which might be required in a waste management system, including transportation, socio-economic and other related concerns.

At each hearing a brief was presented by departmental staff providing background information and addressing the questions under consideration. This brief utilized the Department's 1985 report entitled "Hazardous Waste Management In Manitoba" which gave a very preliminary estimate by region of the hazardous waste produced in Manitoba, discussed a variety of possible treatment and disposal options and outlined a number of management system alternatives. This report had earlier been distributed as general information leading up to the hearings. Also addressed in the departmental brief was a consultant's (IDS/Monenco) analysis of the various options, projecting capital and operating costs over a 20 year period.

The hearings received a wide variety of representations and briefs at Winnipeg and at ten other locations in the agricultural and northern areas of the Province.

The report was compiled in two volumes. Volume one, issued in May, 1987, briefly reviewed the hearing process, and presented a condensation of observations, conclusions and recommendations intended to serve as guidelines to the Manitoba Waste Management Corporation in its program to plan and establish a viable hazardous waste management system. Volume two, issued in July, 1987, presented in considerable detail a summary of the evidence and representations received at the various hearings which had served as the basis for the conclusions and recommendations contained in Volume one.

Smelter Stack Emission Regulation

In the spring of 1987, a draft regulation of smelter emissions was developed by the Manitoba Government. This draft was released for public discussion to obtain the reaction of both the mining companies and members of the public. The draft regulation contained emission control standards that would regulate the Inco smelter in Thompson and also the Hudson Bay Mining and Smelting Co. Limited smelter in Flin Flon. The regulation proposed maximum annual limits on the emission of sulphur dioxide to be effective in 1987 with reduced limits to apply in 1994. There were also particulate emission limits.

The Commission held public hearings in Thompson and Flin Flon in late May and early June, 1987. A hearing was also held in Winnipeg. Representations were received from both of the major mining companies and from the Environment Department. There were also representations from affected unions, municipal jurisdictions and private citizens, representatives from Environment Canada, and the Department of Energy and Mines.

The proposed regulation was designed to fulfill Manitoba's committment to reduce provincial sulphur dioxide emission to an annual limit of 550 kilotonnes by 1994. Both companies argued that at least part of the unassigned quota of 130 kilotonnes of sulphur dioxide should be allocated to existing industry. INCO expressed a serious concern with respect to reaching the proposed 1994 sulphur dioxide limits, especially the monthly values. The contention was that either production would have to be cut or additional nickel would have to be wasted in order to meet the proposed sulphur dioxide limit. Hudson Bay Mining and Smelting would require a new zinc pressure leach process to meet both sulphur dioxide and particulate limits. Hudson Bay was also concerned that the particulate limit would be difficult to meet in 1994.

Following the hearings and subsequent consideration, the Commission submitted its report and recommendations to the Minister.

Investigation of Smoke from Agricultural Burning Practices

In June, 1987 the Commission received a request from the Minister to hold public hearings to investigate the practice of burning of crop residue, commonly referred to a stubble burning, and provide him with a report and recommendations. This request was the result of numerous complaints about smoke, largely from citizens of Winnipeg, which both the Minister's office and the Environment Department had received every fall for the past several years.

Participation of the agricultural community was essential to the investigation and therefore hearings were arranged to take place in the late fall when harvest activities would be completed.

Arrangements were made for a number of hearings in locations in near proximity to the City of Winnipeg, including Grosse Isle, Oak Bluff, Dugald, Elie and Niverville. Hearings were also arranged for Carman, Brandon and Winnipeg. Locations were chosen based on advice from agricultural experts familiar with the problems. Some farming districts surrounding Winnipeg were known to be areas where greater than average burning usually occurs. Few, if any complaints had been received from areas remote from the City.

After the initially planned hearings were announced, the Rural Municipality of Lac du Bonnet requested that the hearings be extended into the peat burning area and that the burning of peat be included in this investigation. With the concurrence of the Minister the Commission agreed to extend the terms of reference of the hearing series to include peat fires. Additional hearings were held in Whitemouth and Lac du Bonnet in late November and early December 1987.

Also, at the request of the Council of the Rural Municipality of Russell, an additional hearing was held in Rossburn to allow for representations to be received from citizens in that area.

All hearings were well attended with lively discussion and questions generated by many presentations.

The Commission's report to the Minister on its investigation of agricultural burning practices was submitted in April, 1988.

State of the Environment

There were a number of very important environmental matters that took place in Manitoba during the fiscal year. A new Environment Act was proclaimed on March 31, 1988, marking some changes in direction in matters of environmental management. Earlier, in September 1987, The National Task Force on Environment and Economy reported to the Canadian Council of Resource and Environment Ministers.

The new Environment Act ensures that all developments are planned to take into account concerns of all affected parties. Proponents of developments must register projects with the Department of Environment and conduct an environmental assessment if significant environmental impacts are considered likely. There are opportunities for the public to make input to the process during the review, including public hearings held by the Clean Environment Commission when there is sufficient concern or interest in the matter. Project approval comes in the form of a license designed to ensure the protection of the environment. On the other hand, licensing may be refused on the grounds that the project is environmentally unacceptable. The Act provides for an effective response for non-compliance. Stiff penalties, including incarceration of responsible individuals, may be invoked.

Under the Clean Environment Act, The Clean Environment Commission was required to report on the state-of-the-environment as part of its annual report. The Commission, with its small staff and resources, was never able to produce a comprehensive report with baseline data to establish trends and comparative analyses of year-to-year conditions. The Commission, therefore, confined itself to observations of matters of significance, in which it had some involvement or which had come to its attention during the year under review.

Under the new Environment Act, the Environment Department will be given this task on a bi-annual reporting basis. The Department's resources will no doubt result in a more comprehensive and technically sophisticated document which will provide Manitobans with a good reading on their environment, an insight into past and present trends and a forecast for the future, with appropriate warnings where necessary. The Commission will look forward to this new endeavor.

The Manitoba Hazardous Waste Management Corporation began in 1987 to establish a hazardous waste management system for the Province. A board was appointed early in the year with the first staff hired by mid year. With the advent of staff, initial efforts were directed toward strategic planning for the system's development. Aside from the planning process, the Corporation received a number of activities from the Department of the Environment such as funding for the Manitoba Waste Exchange, Household Hazardous Waste Days and the disposal of various waste stored at the Gimli facility. Early in 1988, the Corporation established the "Generator Services Program" to encourage industrial waste minimization by reduction, reuse, recycling and recovery. There have apparently been significant savings on the part of clients as a result of source based waste management solutions.

The National Task Force on Environment and Economy was established by the Canadian Council of Resource and Environment Ministers in 1986 to examine the integration of the environment and the economy. The Task Force consisted of representatives of government, industry, and environmental organizations under the chairmanship of the Manitoba Minister of the Environment and Workplace Safety and Health, the Honourable Gerard Lecuyer. The Task Force reported to the Council in September, 1987.

The main objective stipulated in the report is to promote environmentally sound economic growth and development. The following recommendations from the report are designed to meet that objective;

- Development of a new cooperative initiative to integrate economic and environmental planning through the participation and debate of senior decision makers in every province and territory and at the national level in Canada.
- The development of conservation strategies in every Canadian jurisdiction.
- The exploration of tools and techniques which can assist in better understanding the linkages between the environment and the economy.
- In that environment considerations are essential to social and economic planning, leaders in both government and industry must assume new responsibilities.
- Canada's role must be strengthened in the international movement to integrate environmental protection and economic development.
- Public participation must be increased to ensure a better understanding of the issue.

In May, 1986, the Canadian government released the first comprehensive report ever undertaken on the State of the Environment for Canada. The document reports on the basis of 15 terrestrial ecozones and 4 aquatic ecosystems. The authors note that

this approach allows characteristics of the environment to be compared within ecosystems over time and between one ecozone and another at any one time. The examination of ecosystems was based not on general descriptions and subjective interpretation but on quantitative data of physical, biological and dynamic response characteristics. The bottom-line is that the extent and seriousness of potential or actual environmental change, or the amount and condition of a specific natural resource and its relation to other resources, may be identified in a way not previously possible.

Some observations from the first Canadian State of the Environment Report follow.

Agriculture

The total value of agricultural production increased by about 45 percent in the decade beginning 1971 but the total costs for inputs such as fertilizers, chemicals and farm fuel increased by more than 100 percent. The areas of fertilizer and chemical application increased by about 170 and 340 percent respectively. Nearly 150,000 hectares of rural land were converted to urban use during the 10 year interval beginning in 1966. Of this land more that 60 percent was prime agricultural. The loss of organic matter in various parts of the country has been estimated to be as much as 50 percent since cultivation began. Studies on nutrient balance in agriculture in many areas has shown that a far greater quantity of nutrient content is now applied than taken out by removal of crops. It has been estimated that dryland salinity may be expanding in parts of Saskatchewan as a result of irrigation. Although not monitored systematically it is thought that annual soil erosion rates of 20 to 25 tonnes per hectare are quite common in high risk areas.

Forestry

Sizeable areas of once forested land appear not to be properly regenerated after harvesting and other stresses. There appears to be a tendency towards increased incidence of forest insect pests. The recent budworm infestation is the most severe of the century. Further, some weakening of forest trees through secondary effects of air pollution may facilitate the spread of insects and diseases. There is growing concern, especially in light of the current European experience, about the threat of acid precipitation and other pollution stresses to the health of forest ecosystems.

Aquatic Systems

The abundance of freshwater lakes, and the many practically uninhabited drainage basins place Canada in a unique position with respect to water resources. Although this country has not experienced the extreme levels of water degradation found in parts of the industrial world nor the kind of competition found in densely populated Third World countries, an overall assessment of the state of Canada's aquatic ecosystems does not suggest grounds for complacency.

Over-fishing has certainly led to the depletion or disappearance of fresh water fish stocks in some lakes and rivers and has also seriously impacted the ocean fishery. The growth of fertilizer use, the application of pesticides, nutrient run-off from feedlots and siltation problems caused by soil erosion have clearly had detrimental effects on the quality of water that drains the intensively cultivated agricultural regions of Canada. The problem of how to control the long-range atmospheric transport of chemical contaminants, including their manifestation as acid rain is still far from any satisfying solution. The demand for cheap energy from hydro-electric power has, given the scale of these development projects, drastically altered the hydrological regimes in many remote parts of the country. The inquiry on Federal Water Policy recognized the urgency of planning and responding to the high likelihood of demands for water transfer from "north flowing rivers to the water-deficient basins in the western and mid-western United States".

In March 1987, the Canadian Council of Resource and Environment Ministers prepared a document known as the "CANADIAN WATER QUALITY GUIDELINES".

The document was developed because Canadians are concerned about the quality of their water resources and are confronted by a number of problems threatening these resources. An obstacle in assessing the magnitude of these problems is the difficulty of defining acceptable water quality for specific uses.

The "Guidelines" were developed to provide basic scientific information about the effects of water quality parameters on uses in order to assess water quality issues and concerns and to establish water quality objectives for specific sites. The following major uses of water are addressed in the document:

Raw water for drinking water supply

Recreational water quality and aesthetics

Freshwater aquatic life

Agricultural uses

Industrial water supplies

The federal guidelines contain recommendations for chemical, physical, radiological and biological parameters necessary to protect and enhance designated uses of water. The rationale for each parameter is included to assist in the development of water quality objectives to suit local water conditions.

In Manitoba, surface waters are used for many purposes including domestic and industrial consumption, agricultural use and recreational pursuits as well as providing the natural environment for aquatic life. To protect existing water quality, and to achieve harmony between the various uses, provincial surface water quality objectives were developed in 1979. One of the original recommendations of the Clean Environment Commission resulting from public hearings of the objectives was that the water quality objectives be reviewed every 3 years and, when warranted, proposals be formulated for revision of the objectives. In 1984, the Environment Department undertook to revise the water quality objective document. The Commission held hearings on the revisions in November, 1984 and based upon the presentation of evidence, reported to the Minister on its findings in September, 1985. Although the program to classify and apply water quality objections to all of the watershed basins of Manitoba was temporarily suspended, in order to utilize available manpower resources in areas of greater priority, the Commission believes that this program should be re-instated in the interest of the protection or enhancement of the surface water of Manitoba which is so important to the quality of the environment and the well being of all Manitobans.

Appendix A

Regulations Under the Clean Environment Act

1973 February 13, 1973 — Manitoba Regulation 34/73, as amended by M.R. 6/76, respecting Livestock Production Operations. Any person operating or intending to operate a livestock production operation is not required to file a proposal or register as provided for in subsections 14 (1) and 14 (4) of The Clean Environment Act. Operators of livestock production operations falling into certain environmental categories as specified by the Regulation must register the operations with the Department.

1974 December 31, 1974 — Manitoba Regulation 334/74, respecting Incinerators. Any person intending to construct or operate a new incinerator is not required to file a proposal as provided for in subsection 14 (1) of The Clean Environment Act but that person must register the incinerator with the Department.

1975 June 15, 1975 — Manitoba Regulation 120/75, respecting Liquid Effluent Discharges from Pulp and Paper Mills. Any person operating or intending to operate a pulp and paper mill is not required to file a proposal or register as provided for in subsections 14 (1) and 14 (4) of The Clean Environment Act with respect to liquid effluent discharges from the mill but that person must meet the requirements of the Federal Fisheries Act.

1976 January 26, 1976 — Manitoba Regulation 18/76, respecting the Disposal of Whey. Any person discharging or disposing of whey from a dairy manufacturing plant is not required to file a proposal or register as provided for in subsections 14 (1) and 14 (4) of The Clean Environment Act with respect to liquid effluent discharges from the dairy; however, no person is to dispose of whey into the environment other than by acceptable methods as prescribed by the regulation.

1976 September 20, 1976 — Manitoba Regulation 208/76, respecting Waste Disposal Grounds. Any person operating or intending to operate a waste disposal ground is not required to file a proposal or register as provided for in subsections 14 (1) and 14 (4) of The Clean Environment Act but must register the proposal with the Department and meet the requirements as specified by the Regulation.

1977 July 13, 1977 — Manitoba Regulation 140/77, respecting Discharges to the Air from Secondary Lead Smelters. Any person operating or intending to operate a secondary lead smelter is not required to file a proposal or register as provided for in subsections 14 (1) and 14 (4) of The Clean Environment Act with respect to emissions of particulate matter and lead particulate matter from the smelter. Secondary lead smelters are subject to Regulations under the Federal Clean Air Act.

1977 July 19, 1977 — Manitoba Regulation 145/77, whereby the Minister declared portions of lands in the Local Government District of Fisher as a Critical Area for the purposes of Manitoba Regulation 156/80.

1978 June 26, 1978 — Manitoba Regulation 115/78, whereby the Minister declared portions of lands in the Rural Municipality of Victoria as a Critical Area for the purposes of the Storage and Handling of Gasoline and Associated Products Regulation.

1979 October 17, 1979 — Manitoba Regulation 202/79, whereby the Minister declared portions of lands in the Rural Municipality of Ritchot as Residential Areas for the purposes of the Livestock Production Operations Regulation.

1980 June 27, 1980 — Manitoba Regulation 112/80, respecting Campgrounds.

1980 September 3, 1980 — Manitoba Regulation 156/80, respecting the Storage and Handling of Gasoline and Associated Products. Any person operating or intending to operate a storage tank system is not required to file a proposal or register as provided for in subsections 14 (1) and 14 (4) of The Clean Environment Act. In the Regulation, no person shall construct or operate a storage tank system without completing and filing a departmental form. No person shall operate an existing tank system without registering the system. No person shall alter an existing storage tank system without registering the plans with the Department. This regulation repeals Manitoba Regulations 148/76, 42/77, and 246/77.

1980 September 16, 1980 — Manitoba Regulation 165/80, respecting The City of Winnipeg Amy Street Heating Plant located at 21 Amy Street, Winnipeg, Manitoba. This regulation postponed to September 1, 1985, the imposition of the stated air pollution control limits.

1981 January 7, 1981 — Manitoba Regulation 15/81, respecting the designation of certain substances as Hazardous Materials.

Regulations Under the Clean Environment Act (Cont'd)

1981 March 27, 1981 — Manitoba Regulation 85/81, respecting Private Sewage Disposal Systems and Privies. Any person operating or intending to operate a private sewage disposal system with a sewage flow of less than 14,000 litres of sewage per day is not required to file a proposal or register as provided for in subsections 14 (1) and 14 (4) of The Clean Environment Act. Private sewage disposal systems must be registered with the Department and meet the requirements of the Regulation. This regulation repeals Manitoba Regulation 242/76.

1984 May 30, 1984 — Manitoba Regulation 119/84, whereby the Minister designated portions of the Province as sensitive areas for the purposes of Manitoba Regulation 85/81.

1984 May 30, 1984 — Manitoba Regulation 120/84, whereby the Minister designated portions of the Province as sensitive areas for the purposes of Manitoba Regulation 85/81.

1984 June 1, 1984 — Manitoba Regulation 124/84, respecting Litter. Manitoba Regulation 259/74 is repealed.

1985 April 24, 1985 — Manitoba Regulation 98/85, respecting Pesticides. Any person intending to apply pesticides is not required to file a proposal as provided for in subsection 14 (1) of The Clean Environment Act provided the person meets the requirements of this regulation. Manitoba Regulations 156/74, 161/75, 26/78, 118/79 and 174/75 are repealed.

1985 August 27, 1985 — Manitoba Regulation 183/85, whereby the Minister declared portions of lands in the Rural Municipality of East St. Paul as a Critical Area for the purposes of the Storage and Handling of Gasoline and Associated Products Regulation.

1985 August 27, 1985 — Manitoba Regulation 184/85, whereby the Minister designated portions of the Town of Neepawa sensitive areas for the purposes of the Storage and Handling of Gasoline and Associated Products Regulation.

1985 October 9, 1985 — Manitoba Regulation 219/85, respecting The City of Winnipeg Amy Street Heating Plant located at 21 Amy Street, Winnipeg, Manitoba. This regulation postponed to September 1, 1990, the imposition of the stated air pollution control limits.

1988 During January and February of 1988 the preceding regulations were filed under the new Manitoba Environment Act as part of the transition that took place as the old Clean Environment Act was phased out.

1988 March 31, 1988 — Manitoba Regulation 165, respecting Inco Limited and Hudson Bay Mining and Smelting Co. Limited Smelter Complexes was filed under the Manitoba Environment Act. This regulation was the subject of an investigation conducted by the Clean Environment Commission in the year 1987 - 88. Also filed on this date were the Licensing Procedures Regulation (163/88) and the Classes of Development Regulation (164/88) under the Environment Act.

Appendix B

Public Hearings — 1987/88

Hearing Number	Date	Subject	Location
H-01-87/88	87/04/14	Department of Natural Resources, Clearwater Provincial Park in connection with the operation of a proposed sewage lagoon system located at Campers' Cove.	The Pas
H-02-87/88	87/05/14 87/05/15 87/05/22	Quarries in the R.M. of Rockwood in connection with noise emissions and hours of operation.	Stonewall
H-03-87/88	87/05/26	Review of a draft Smelter Emission Regulation for the control of particulate and sulphur-dioxide emissions from the Inco. Ltd. smelter in Thompson and the Hudson Bay Mining & Smelting Company Ltd., smelter in Flin Flon.	Thompson
H-04-87/88	87/05/27	Review of a draft Smelter Emission Regulation for the control of particulate and sulphur-dioxide emissions from the Inco. Ltd. smelter in Thompson and the Hudson Bay Mining & Smelting Company Ltd., smelter in Flin Flon.	Flin Flon
H-05-87/88	87/06/04	Review of a draft Smelter Emission Regulation for the control of particulate and sulphur-dioxide emission from the Inco. Ltd. smelter in Thompson and the Hudson Bay Mining & Smelting Company Ltd., smelter in Flin Flon.	Winnipeg
H-06-87/88	87/06/09	The Town of Winnipeg Beach in connection with the operation of a five cell sewage lagoon system located in the SE 1/4 of Section 34, Township 17, Range 4 EPM in the Town of Winnipeg Beach and the NE 1/4 of Section 27, Township 17, Range 4 EPM in the Rural Municipality of St. Andrews, with discharge of effluent through a low lying swamp to the south of the lagoon system to Lake Winnipeg.	Town of Winnipeg Beach
H-07-87/88	87/06/25	The Town of Neepawa in connection with the operation of a wastewater treatment facility, located in the SW 1/4 of Section 35, Township 14, Range 15 WPM in the Rural Municipality of Langford, Manitoba, to treat wastewater from the Springhill Farms Ltd. Abattoir, with discharge of effluent via a pipeline to the Whitemud River.	Neepawa
H-08-87/88	87/08/21	The Winnipeg Bible College and Theological Seminary in connection with operation of a sewage lagoon system located in Lot Q, Plan 6079 in the Rat River Settlement at Otterburne in the Rural Municipality of De Salaberry, Manitoba, with discharge of effluent to the Rat River.	Otterburne
H-09-87/88	87/09/16	CSP Foods Ltd. in connection with the operation of a plant for the manufacture of vegetable oil, meal and other products from Canola and other oilseeds, located in the SW 1/4 of Section 33, Township 20, Range 29 WPM in the Rural Municipality of Russell, with drainage of effluent to the Assiniboine River.	Russell
H-10-87/88	87/10/20	Agricultural Burning Investigation, a review of farm crop residue burning practices and related smoke problems.	Grosse Isle
H-11-87/88	87/10/23	Agricultural Burning Investigation, a review of farm crop residue burning practices and related smoke problems.	Oak Bluff
H-12-87/88	87/10/26	Agricultural Burning Investigation, a review of farm crop residue burning practices and related smoke problems.	Niverville

Public Hearings — 1987/88 (Cont'd)

Hearing Number	Date	Subject	Location
H-13-87/88	87/10/27	Agricultural Burning Investigation, a review of farm crop residue burning practices and related smoke problems.	Brandon
H-14-87/88	87/10/30	Agricultural Burning Investigation, a review of farm crop residue burning practices and related smoke problems.	Dugald
H-15-87/88	87/11/2,3	Agricultural Burning Investigation, a review of farm crop residue burning practices and related smoke problems.	Winnipeg
H-16-87/88	87/11/4	Agricultural Burning Investigation, a review of farm crop residue burning practices and related smoke problems.	Carman
H-17-87/88	87/11/4	Agricultural Burning Investigation, a review of farm crop residue burning practices and related smoke problems.	Elie
H-18-87/88	87/11/30	Agricultural Burning Investigation, a review of agricultural and other burning practices and resulting smoke problems related to peat fires.	Whitemouth
H-19-87/88	87/12/2	Agricultural Burning Investigation, a review of agricultural and other burning practices and resulting smoke problems related to peat fires.	Lac du Bonnet
H-20-87/88	87/12/7	Agricultural Burning Investigation, a review of farm crop residue burning practices and related smoke problems.	Rossburn
H-21-87/88	87/12/10	McCain Foods Limited, in connection with the operation of a potato processing plant located on Lot 1 on Ninth Avenue in the Industrial Park in the City of Portage la Prairie, with the emission of noise and odor to the atmosphere.	Portage la Prairie
H-22-87/88	87/12/17	Interlake Colony Farms Ltd., in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 5, Township 17, Range 3 WPM in the Rural Municipality of Rockwood, Manitoba, with discharge of effluent to Netley Creek.	Teulon
H-23-87/88	88/02/23	Rural Municipality of Blanshard in connection with the operation of a sewage lagoon system in NW 1/4 of Section 28, Township 13, Range 22 WPM in the said Municipality, serving the unincorporated village of Oak River, with discharge of effluent to the Oak River via local surface drainage.	Oak River
H-24-87/88	88/02/29	General Scrap & Car Shredder Ltd., in connection with the operation of a scrap and car shredding operation located on part of the NW 1/4 of Section 17, Township 11, Range 4 EPM in the Rural Municipality of Springfield, Manitoba.	Winnipeg

Appendix C

1. Orders Resulting From Applications

1. Order No. 1116 — Issued to Department of Natural Resources, in connection with the operation of the Campers' Cove Sewage Lagoon system located in Section 31, Township 57, Range 25 WPM in the Clearwater Lake Provincial Park, Manitoba, serving the buildings and facilities within the Park. — April 24
2. Order No. 1117 — Issued to Granges Exploration Ltd./Albermin Corporation in connection with the operation of the Tartan Lake Mine complex, including a mill, refinery, sewage treatment plant and ancillary facilities, located in the East Half of Section 1, Township 68, Range 29 WPM and Sections 5 and 6 of Township 68, Range 28 WPM in Manitoba with discharge of tailings solids and wastewater to a tailings disposal area southeast of the mine and with discharge of liquid effluent from the tailings disposal area to Tartan lake. — June 17
3. Order No. 1118 — Issued to Sunnyside Colony Ltd., in connection with the operation of a sewage lagoon system located in the NE 1/4 of Section 15, Township 9, Range 5 WPM in the Rural Municipality of Grey, Manitoba, with discharge of effluent through local drainage and the Hargest Drain to the Elm Creek Channel. — July 2
4. Order No. 1119 — Issued to The Department of Government Services in connection with the operation of a sewage lagoon system located in Section 27, Township 13, Range 14 EPM in Whiteshell Provincial Park in Manitoba; serving the Bannock Point Rehabilitation Camp, with discharge of effluent to the Whiteshell River. — July 2
5. Order No. 1020 — Issued to Park North Logging and Lumber in connection with the operation of a facility for the wood preservative treatment of fence posts located in the NE 1/4 of Section 16, Township 23, Range 3 EPM in the Rural Municipality of Bifrost. — July 2
6. Order No. 1121 — Issued to Manfor Ltd., in connection with the discharge of effluent from the operation of a sewage treatment facility serving a construction camp for a paper mill complex near The Pas, Manitoba, with discharge of effluent to a slough adjacent to the Industrial complex. — August 18
7. Order No. 1122 — Issued to Loveday Mushroom Farms Ltd., in connection with the operation of a mushroom growing facility located at or near 556 Mission Street in the City of Winnipeg. — August 18
8. Order No. 1123 — Issued to the Rural Municipality of Morris in connection with the operation of a sewage lagoon system located in the NW 1/4 of Section 9, Township 6, Range 1 EPM in the Rural Municipality of Morris, serving the unincorporated village of Rosenort, with discharge of effluent via a local ditch and the Goosen Drain to the Morris River. — August 18
9. Order No. 1124 — Issued to James Valley Colony Farms Ltd., in connection with the operation of a sewage lagoon system located in the SE 1/4 of Section 4, Township 10, Range 2 WPM in the Rural Municipality of Cartier, Manitoba, serving the Star Lite Colony Farm with discharge of effluent either for the irrigation of crops or, via a municipal drain and the Starbuck provincial drain, to the LaSalle River. — August 18
10. Order No. 1125 — Issued to the Village of Notre Dame De Lourdes in connection with the operation of a sewage lagoon system located in the SE 1/4 of Section 2, Township 7, Range 9 WPM in the Rural Municipality of South Norfolk, Manitoba, with drainage of effluent to a swamp located in the same quarter-section. — September 15
11. Order No. 1126 — Issued to Steel Brothers Canada Ltd., in connection with the operation of a lime kiln plant located in LSD 11 and 12, Section 23, Township 28, Range 10 WPM in the Local Government District of Grahamdale, Manitoba with discharge of combustion and process by-products to the atmosphere and liquid waste to settling ponds in the quarry and thence by a drainage ditch to Lake Manitoba. — October 15
12. Order No. 1127 — Issued to the Rural Municipality of Coldwell in connection with the operation of a sewage lagoon system located in the NE 1/4 of Section 2, Township 20, Range 5 WPM in the said Rural Municipality, serving the unincorporated village of Lundar with discharge of effluent via a road ditch and the Burnt Lake Drain to Swan Lake. — October 15

1. Orders Resulting From Applications (Cont'd)

13.	Order No. 1128 — Issued to the Canadian Bronze Company Limited in connection with the operation of a non-ferrous foundry located at or near 15 Bury Avenue in the City of Winnipeg.	November 10
14.	Order No. 1129 — Issued to Snow Lake Gold Corporation in connection with the operation of a metallurgical complex including a plant for the extraction of gold from arsenopyrite residues, ancillary works, buildings and tailings areas, located on E.A.L. 14, in Township 68, Range 14 WPM, in the Town of Snow Lake.	December 7
15.	Order No. 1130 — Issued to the Canada Metal Company Limited in connection with the operation of a non-ferrous foundry located at or near 1221 St. James Street in the City of Winnipeg.	December 15
16.	Order No. 1131 — Issued to North West Smelting and Refining Ltd., in connection with the operation of a non-ferrous metal smelting and refining plant located at or near 2185 Logan Avenue in the City of Winnipeg.	December 21
17.	Order No. 1132 — Issued to Central Concrete Ltd. in connection with the operation of a concrete batch plant located on Mission Street between Panet Road and Lagimodiere Boulevard in the City of Winnipeg.	Note Issued
18.	Order No. 1133 — Issued to Nabisco Brands Ltd., in connection with the operation of the Melrose Foods coffee processing plant located in Lot 7, Block 6 of the Whyte Ridge Industrial Park in the City of Winnipeg.	December 15
19.	Order No. 1134 — Issued to Bituminex Limited in connection with the operation of an asphalt plant located at or near the junction of the Dupuy Avenue and the C.N.R. right-of-way in Winnipeg.	January 15
20.	Order No. 1135 — Issued to the Department of Natural Resources in connection with the operation of a sewage system located in the SE 1/4 of Section 22, Township 1, Range 20 WPM in Turtle Mountain Provincial Park, Manitoba, serving the Adam Lake camping area with discharge of effluent via a swampy area to Bower Lake.	January 15
21.	Order No. 1136 — Issued to the Rural Municipality of Siglunes in connection with the operation of a sewage lagoon system located at Section 22, Township 25, Range 7 WPM in the Rural Municipality of Siglunes serving the unincorporated Village of Ashern with discharge of effluent to the Moosehorn Lakes via roadway ditches and a swamp, with eventual drainage to Lake Manitoba via Moosehorn Creek.	January 15
22.	Order No. 1137 — Issued to the Town of Carman in connection with the operation of an expanded sewage lagoon system located in Sections 29 and 30, Township 6, Range 4 WPM in the Rural Municipality of Dufferin, Manitoba, with discharge of effluent to the Boyne River.	January 15
23.	Order No. 1138 — Issued to the Department of Northern Affairs in connection with the operation of a sewage lagoon system located in part of Section 31, Township 60, Range 21 WPM in northern Manitoba, serving the Cormorant Community, with effluent discharge to Little Cormorant Lake.	January 15
24.	Order No. 1139 — Issued to the Department of Northern Affairs in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 31, Township 36, Range 19 WPM, serving the Community of Duck Bay, Manitoba, with discharge of effluent to Peat Lake and Lake Winnipegosis.	January 15
25.	Order No. 1140 — Issued to Mr. Dave Dufour in connection with the operation of a sewage lagoon system located in the NE 1/4 of Section 32, Township 18, Range 10 EPM in the Local Government District of Alexander, Manitoba, serving all or part of the Chevrefils settlement, with discharge of effluent to the Winnipeg River.	January 15

1. Orders Resulting From Applications (Cont'd)

26. Order No. 1141 — Issued to the Rural Municipality of Grey in connection with the operation of a sewage lagoon system, located on the E 1/2 of the NW 1/4 of Section 20, Township 8, Range 4 WPM in the Rural Municipality of Grey, serving the unincorporated village of Elm Creek, discharging effluent via local ditches and Bryson Drain, to the Elm Creek Channel and eventually draining into the LaSalle River. — January 18

27. Order No. 1142 — Issued to the village of Ethelbert in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 31, Township 29, Range 21 WPM in the Rural Municipality of Ethelbert, Manitoba with discharge of effluent to Shanty Creek. — January 18

28. Order No. 1143 — Issued to the Village of Gilbert Plains in connection with the operation of a sewage lagoon system located in NW 1/4 of Section 10, and the SW 1/4 of Section 15, Township 25, Range 22 WPM in the said Village and in the Rural Municipality of Gilbert Plains, Manitoba, with discharge of effluent to the Valley River. — January 18

29. Order No. 1144 — Issued to Grand Colony Farms Ltd., in connection with the operation of a sewage lagoon system located in the NW 1/4 of Section 29, Township 10, Range 4 WPM in the Rural Municipality of Portage la Prairie, Manitoba, with discharge of effluent via local drainage to the Elm River Channel. — January 18

30. Order No. 1145 — Issued to Manitoba Hydro in connection with the operation of a sewage lagoon system located in the NW 1/4 of Section 27, Township 48, Range 13 WPM in the Local Government District of Grand Rapids, Manitoba, serving the Manitoba Hydro Grand Rapids Townsite with discharge of effluent to Lake Winnipeg. — January 18

31. Order No. 1146 — Issued to the Local Government District of Grand Rapids in connection with the operation of a sewage treatment plant located in part of Section 34, Township 48, Range 13 WPM in the said Local Government District with discharge of effluent to Lake Winnipeg. — January 18

32. Order No. 1147 — Issued to Interlake Colony Farms Ltd. in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 5, Township 17, Range 3 WPM in the Rural Municipality of Rockwood, Manitoba, with discharge of effluent to Netley Creek. — January 18

33. Order No. 1148 — Issued to Manitoba Hydro in connection with the operation of a sewage treatment plant located in Township 64, Range 4 WPM near the Jenpeg generating station in, Manitoba with discharge of effluent to the Nelson River. — January 18

34. Order No. 1149 — Issued to the Town of Killarney in connection with the operation of a sewage lagoon system located in Section 34, Township 2, Range 17 WPM in the Rural Municipality of Turtle Mountain, Manitoba, with discharge of effluent to the Whitemud River. — January 18

35. Order No. 1150 — Issued to the Lord Selkirk School Division No. 11 in connection with the operation of a sewage treatment plant and holding pond located in parts of River Lots 104, 105 and 106, Plan 2565 in the Parish of St. Andrews in the Rural Municipality of St. Andrews, Manitoba, serving the Lockport Junior High School with discharge of effluent via ditches to the Red River. — January 19

36. Order No. 1151 — Issued to the Town of Oak Lake in connection with the operation of a sewage lagoon system located in the SE 1/4 of Section 26, Township 9, Range 24 WPM in the Town of Oak Lake, Manitoba, with discharge of effluent to the Oak River. — January 19

37. Order No. 1152 — Issued to Pioneer Meat Ltd., in connection with the operation of a wastewater lagoon system located in the SE 1/4 of Section 34, Township 1, Range 1 WPM in the Rural Municipality of Rhineland. — January 19

38. Order No. 1153 — Issued to the Rolling River School Division in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 31, Township 11, Range 18 WPM in the Rural Municipality of Elton serving the Elton Collegiate and the Forrest Elementary School with discharge of effluent via a drainage ditch to Willow Creek. — January 19

1. Orders Resulting From Applications (Cont'd)

39. Order No. 1154 — Issued to the Lord Selkirk School Division No. 11 in connection with the operation of a sewage treatment plant located in part of River Lot 61, Plan 3938 WLTO, in the Parish of St. Andrews in the Rural Municipality of St. Andrews serving the St. Andrews Elementary School with discharge of effluent to the Red River. — January 19

40. Order No. 1155 — Issued to the Department of Northern Affairs in connection with the operation of a sewage treatment plant located on part of Parcel "H", Plan 664 NLTO in Township 56, Range 19 EPM on Stevenson Island in Island Lake with discharge of effluent to Island Lake. — January 19

41. Order No. 1156 — Issued to the Town of Snow Lake in connection with the operation of a sewage treatment plant located in Parcel A, Plan 7734 in Township 68, Range 17 WPM in the Town of Snow Lake with discharge of effluent to Snow Lake. — January 19

42. Order No. 1157 — Issued to Westroc Colony Farms Ltd., in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 28, Township 13, Range 9 WPM in the Rural Municipality of Westbourne with discharge of effluent via a swale to the Whitemud River. — January 19

43. Order No. 1158 — Issued to the Greenwald Colony Farms Ltd., in connection with the operation of a sewage lagoon system located in the NE 1/4 of Section 26, Township 15, Range 7 EPM in the Rural Municipality of St. Clements with discharge of effluent to irrigate farmland. — January 21

44. Order No. 1159 — Issued to the Department of Natural Resources in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 24, Township 4, Range 4 EPM in the Rural Municipality of DeSalaberry serving the St. Malo Recreation area, with infiltration of lagoon contents into the soil. — February 18

45. Order No. 1160 — Issued to the Frontier School Division No. 48 in connection with the operation of a sewage treatment plant located in Parcel 1, Plan 57568 CLSR, 11161 WLTO, serving the Berens River School with discharge of effluent to Lake Winnipeg. — February 18

46. Order No. 1161 — Issued to the City of Flin Flon in connection with the operation of a sewage treatment plant located on Parcel "A", Plan No. CY202, PALTO, in the Province of Saskatchewan, with discharge of effluent to Ross Creek. — February 18

47. Order No. 1162 — Issued to the Town of Morris in connection with the operation of a sewage lagoon system located in Parcels A and B, Plan 7675 in the Town of Morris with discharge of effluent to the Red River and to irrigate a golf course located on Parcels 1 and 2, Plan 6547. — February 18

48. Order No. 1163 — Issued to Nuwest Alloys in connection with the operation of a non-ferrous foundry located in the E 1/2 of Lot 13, D.G.S. pt. S 1/2 and the NE 1/4 of Section 14, Township 11, Range 2 EPM Plan 69 (Selkirk Division), at or near 2141 Logan Avenue in the City of Winnipeg. — February 18

49. Order No. 1164 — Issued to Western Engine Limited, in connection with the operation of a plant for the hard chrome plating and finishing of metal parts located on parts of Lot 53 at or near 410 Madison Street in the City of Winnipeg. — February 18

50. Order No. 1165 — Issued to Crystal Springs Colony Farms Ltd. in connection with the operation of a sewage lagoon system located in the NE 1/4 of Section 16, Township 13, Range 3 EPM in the Rural Municipality of Rockwood, Manitoba, serving Concord Colony Farms Ltd., with discharge of effluent to irrigate farmland. — February 18

51. Order No. 1166 — Issued to the Town of Boissevain in connection with the operation of a sewage lagoon system located in the SE 1/4 of Section 23, Township 3, Range 20 WPM in the Town of Boissevain with discharge of effluent to Cherry Creek. — March 4

52. Order No. 1167 — Issued to the Department of Natural Resources in connection with the operation of an aerated sewage treatment plant located in Section 33, Township 11, Range 5 WPM, in the Rural Municipality of Portage la Prairie serving the Norquay Beach Recreation Area with discharge of effluent to the Assiniboine River. — March 22

1. Orders Resulting From Applications (Cont'd)

53. Order No. 1168 — Issued to the Department of Northern Affairs in connection with the operation of a sewage lagoon system located in the NW 1/4 of Section 34, Township 58, Range 3 WPM at Norway House serving the Community of Norway House with discharge of effluent via a surface channel to the Nelson River. — March 22

54. Order No. 1169 — Issued to the Rural Municipality of Blanshard in connection with the operation of a sewage lagoon system, located in NW 1/4 of Section 28, Township 13, Range 22 WPM in the Rural Municipality of Blanshard serving the unincorporated village of Oak River, with discharge of effluent to the Oak River via local surface drainage. — March 22

55. Order No. 1170 — Issued to the Department of Northern Affairs in connection with the operation of a sewage lagoon system located in Section 13, Township 76, Range 2 EPM at Pikwitonei serving the Community of Pikwitonei with discharge of effluent to a swampy area draining toward Cook Lake. — March 22

56. Order No. 1171 — Issued to the Department of Northern Affairs in connection with the operation of a sewage lagoon system located in Section 6, Township 26, Range 9 EPM at Seymourville serving the Seymourville Community with discharge of effluent to Lake Winnipeg. — March 22

57. Order No. 1172 — Issued to Shell Canada Products Ltd., in connection with the operation of a site for the disposal of hydrocarbon sludge by biodegradation in soil located in part of Section 8, Township 1, Range 1 WPM in the Rural Municipality of Rhineland. — March 22

58. Order No. 1173 — Issued to Frontier School Division No. 48 in connection with the operation of a sewage treatment plant located in Parcels 1 and 3, Plan No. 11379 WLTO serving the Wanipigow School with discharge of effluent to Lake Winnipeg. — March 22

59. Order No. 1174 — Issued to the Department of Natural Resources in connection with the operation of a septic tank and mound sewage disposal field system located in Section 32, Township 12, Range 15 EPM in the Whiteshell Provincial Park serving the White Lake Campground. — March 29

60. Order No. 1175 — Issued to the Town of Leaf Rapids in connection with the operation of a sewage treatment plant located in Lot 5, Block 8, Plan 914, Section 24, Township 86, Range 17 WPM with discharge of effluent to the Churchill River. — March 25

61. Order No. 1176 — Issued to the Department of Northern Affairs in connection with the operation of a sewage lagoon system located in Section 3, Township 45, Range 28 and Section 34, Township 44, Range 28 WPM at Barrows serving the community of Barrows with discharge of effluent via a low area with drainage to Whiskey Creek. — March 25

62. Order No. 1177 — Issued to the Department of Natural Resources in connection with the operation of a septic tank and sewage disposal field system located in Section 17, Township 11, Range 15 EPM in the Whiteshell Provincial Park serving the Brereton Lake Campground. — March 29

63. Order No. 1178 — Issued to the Department of Northern Affairs in connection with the operation of a sewage lagoon system located in Lots 13 and 14, Plan 551 at Camperville serving the Camperville Community, with discharge of effluent via local drainage to Sagamace Bay of Lake Winnipegosis. — March 25

64. Order No. 1179 — Issued to the Department of Northern Affairs in connection with the operation of a sewage lagoon system located in the SE 1/4 of Section 31, Township 29, Range 13 WPM at Crane River serving the Crane River community, with discharge of effluent via surface drainage to the Crane River. — March 25

65. Order No. 1180 — Issued to Custom Asphalt Paving Ltd. in connection with the operation of an asphalt batch plant located at or near 525 Stevens Avenue in the City of Portage la Prairie. — March 25

1. Orders Resulting From Applications (Cont'd)

66. Order No. 1181 — Issued to the Department of Northern Affairs in connection with the operation of a sewage lagoon system located in Sections 27 and 28, Township 54, Range 20 WPM serving the Community of Moose Lake, with discharge of effluent to South Moose Lake. March 30

67. Order No. 1182 — Issued to Red Rock Bible Camp Inc., in connection with the operation of a sewage treatment plant located in Lot 1 in the SW 1/4 of Section 8, Township 12, Range 15 EPM in the Whiteshell Forest Reserve with discharge of effluent to an extensive swampy area draining toward the Rennie River. March 30

68. Order No. 1183 — Issued to the Carman-Dufferin Recreation Commission in connection with the operation of a swimming pool located in SE 1/4 of the W 1/2 of Section 25, township 6, Range 5 WPM in the Town of Carman with discharge of filter backwash water to the Boyne River. March 30

69. Order No. 1184 — Issued to Mr. Daniel Hofer in connection with a scrap recycling and/or disposal operation, entailing burning, located on land owned by the Lakeside Holding Co. Ltd. in Lot 56 in the Rural Municipality of Cartier. March 30

70. Order No. 1185 — Issued to the Town of Steinbach in connection with the operation of a swimming pool located in the NW 1/4 of Section 2, Township 7, Range 6 EPM in the said Town, with discharge of filter backwash water to the Manning Channel. March 30

71. Order No. 1186 — Issued to the Town of Morden in connection with the operation of lime and soda ash settling ponds located in the SE 1/4 of Section 6, Township 3, Range 5 WPM in the said Town with discharge of supernatant effluent to Dead Horse Creek. March 30

72. Order No. 1187 — Issued to the Department of Natural Resources in connection with the operation of a sewage lagoon system located in Section 5, Township 9, Range 17 EPM, in the Whiteshell Provincial Park, serving the Toniata Beach Campground, with discharge of effluent via a swampy area to Falcon Lake. March 30

73. Order No. 1188 — Issued to the City of Winnipeg in connection with the operation of a sewage treatment plant, the "North End Water Pollution Control Centre" located at or near 2230 Main Street in the City of Winnipeg. March 30

74. Order No. 1189 — Issued to the Town of Rivers in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 24 and the SE 1/4 of Section 23, Township 12, Range 21 WPM. March 30

75. Order No. 1190 — Issued to the City of Winnipeg in connection with the expansion and continued operation of a sewage treatment plant, the "South End Water Pollution Control Centre" located on parts of River Lots 151 to 155, inclusive, 157, 158 and 159 in the Parish of St. Norbert, Plan 3941 Parcels "A" and "B" and Plan 10523 WLTO, in the City of Winnipeg. March 30

76. Order No. 1191 — Issued to the Town of Morden in connection with the operation of a sewage lagoon system located in the E 1/2 of Section 9, Township 3, Range 5 WPM, partly in the Town of Morden and partly in the Rural Municipality of Stanley with discharge of effluent to Dead Horse Creek. March 30

77. Order No. 1192 — Issued to the Manitoba Water Services Board in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 17, Township 11, Range 4 WPM in the Rural Municipality of Portage la Prairie serving the unincorporated village of Oakville, with discharge of effluent to the Elm River Channel. March 30

78. Order No. 1193 — Issued to the Rural Municipality of Whitemouth in connection with the operation of a sewage lagoon system located in the W 1/2 of Section 31, Township 11, Range 12 EPM and the E 1/2 of Section 36, Township 11, Range 11 EPM in the said Municipality serving the unincorporated village of Whitemouth. March 30

2. Orders Varied

1.	Order No. 588VCC — Issued to Borland Construction Limited in connection with the operation of a limestone quarry located in the SW 1/4 of Section 5, Township 14, Range 2 EPM in the Rural Municipality of Rockwood.	June 15
2.	Order No. 925VC — Issued to Mulder Construction & Materials Ltd. in connection with the operation of a limestone quarry located in the SE 1/4 of Section 4, Township 14, Range 2 EPM in the Rural Municipality of Rockwood.	June 15
3.	Order No. 856VC — Issued to Standard Limestone Quarries in connection with the operation of a limestone quarry located in the N 1/2 Section 33, Township 13, Range 2 EPM in the Rural Municipality of Rockwood.	June 15
4.	Order No. 855VC — Issued to B-A Construction Ltd. in connection with the operation of a limestone quarry located in the NE 1/4 of Section 33, Township 13, Range 2 EPM in the Rural Municipality of Rockwood.	June 15
5.	Order No. 924VC — Issued to B-A Construction Ltd. in connection with the operation of a limestone quarry located in the SW 1/4 of Section 4, Township 14, Range 2 EPM in the Rural Municipality of Rockwood.	June 15
6.	Order No. 992VC — Issued to Riverside Gravel Company Ltd. in connection with the operation of a limestone quarry located in the NW 1/4 of Section 4, Township 14, Range 2 EPM in the Rural Municipality of Rockwood.	June 15
7.	Order No. 1103VC — Issued to the Town of Neepawa in connection with the operation of a wastewater treatment facility, located in the SW 1/4 of Section 35, Township 14, Range 15 WPM in the Rural Municipality of Langford to treat wastewater from the Springhill Farms Ltd. abattoir, with discharge of effluent via pipeline to the Whitemud River.	July 2
8.	Order No. 314VCOO — Issued to the Town of Winnipeg Beach in connection with the operation of a sewage lagoon system located in the SE 1/4 of Section 34, Township 17, Range 4 EPM in the Town of Winnipeg Beach and the NE 1/4 of Section 27, Township 17, Range 4 EPM in the Rural Municipality of St. Andrews, with discharge of effluent through a low lying swamp to the south of the lagoon system to Lake Winnipeg.	July 29
9.	Order No. 1081VC — Issued to the Winnipeg Bible college and Theological Seminary in connection with the operation of a sewage lagoon system located in Lot Q, Plan 6079 in the Rat River Settlement at Otterburne in the Rural Municipality of DeSalaberry.	August 18
10.	Order No. 588VCCO — Issued to Borland Construction Limited in connection with the operation of a limestone quarry located in the SW 1/4 of Section 5, Township 14, Range 2 EPM in the Rural Municipality of Rockwood.	August 28
11.	Order No. 925VCO — Issued to Mulder Construction & Materials Ltd. in connection with the operation of a limestone quarry located in the SE 1/4 of Section 4, Township 14, Range 2 EPM in the Rural Municipality of Rockwood.	August 28
12.	Order No. 856VCO — Issued to Standard Limestone Quarries in connection with the operation of a limestone quarry located in the N 1/2 of Section 33, Township 13, Range 2 EPM in the Rural Municipality of Rockwood.	August 28
13.	Order No. 855VCO — Issued to B-A Construction Ltd., in connection with the operation of a limestone quarry located in the NE 1/4 of Section 33, Township 13, Range 2 EPM in the Rural Municipality of Rockwood.	August 28
14.	Order No. 924 VCO — Issued to B-A Construction Ltd. in connection with the operation of a limestone quarry located in the SW 1/4 of Section 4, Township 14, Range 2 EPM in the Rural Municipality of Rockwood.	August 28
15.	Order No. 992VCO — Issued to Riverside Gravel Company Ltd. in connection with the operation of a limestone quarry located in the NW 1/4 of Section 4, Township 14, Range 2 EPM in the Rural Municipality of Rockwood.	August 28

2. Orders Varied (Cont'd)

16.	Order No. 1021VC — Issued to Mandak Metal Processors Ltd. in connection with the operation of a scrap metal recovery and processing plant located on River Lots 21, 22, 23, 24, and 25 in the Parish of St. Clements.	September 15
17.	Order No. 1081VCO — Issued to the Winnipeg Bible College and Theological Seminary in connection with the operation of a sewage lagoon system located in Lot Q, Plan 6079 in the Rat River Settlement at Otterburne in the Rural Municipality of DeSalaberry.	November 6
18.	Order No. 959VC — Issued to CSP Foods Ltd. in connection with the operation of a plant for the manufacture of vegetable oil, meal and other products from Canola and other oilseeds, located in the SW 1/4 of Section 33, Township 20, Range 29 WPM in the Rural Municipality of Russell.	November 26
19.	Order No. 940VC — Issued to Roblin Forest Products Ltd. in connection with the operation of a lumber mill and chemical wood treating plant located in the N 1/2 of Section 8, Township 26, Range 28 WPM in the Rural Municipality of Shell River.	February 18
20.	Order No. 898VC — Issued to General Scrap & Car Shredder Ltd. in connection with a scrap and car shredding operation located on part of the NW 1/4 of Section 17, Township 11, Range 4 EPM in the Rural Municipality of Springfield.	March 25